

AMENDMENT TO THE CLAIMS

The following listing of claims will replace all previous listings:

Listing of Claims

1. (Currently amended) A method for measuring a temperature during a test for determining a concentration of a medically significant component of a biological fluid, comprising the steps of:
 - a) providing a sensor having at least one measurement electrode adapted to measure the biological fluid; in which the biological fluid reacts with a reagent to define a reaction zone; and
 - b) making a temperature measurement within the reaction zone; applying a first signal to the measurement electrode;
 - c) measuring a first response to the first signal;
 - d) using the first response to produce an indication of a temperature of the biological fluid;
 - e) applying a second signal to the measurement electrode;
 - f) measuring a second response to the second signal to produce an indication of the concentration of the medically significant component; and
 - g) determining a temperature-corrected concentration of the medically significant component based upon the first and second responses.
2. (Original) The method of claim 1 wherein the sensor comprises a disposable test strip.
- 3-4. Canceled.
5. (Currently amended) The method of claim 1, wherein ~~step (b) comprises:~~
 - ~~b.1) applying a first signal having an AC component to the biological fluid;~~
 - ~~b.2) measuring a first AC response to the first signal; and~~
 - ~~b.3) using the first AC response to produce an indication of a temperature in the reaction zone; the first signal comprises a signal having an AC component and the first response comprises an AC response to the first signal.~~

6. (Original) The method of claim 5, wherein the first AC response comprises an admittance.
7. (Currently amended) The method of claim 5, further comprising the steps of:
- (c) applying a second signal having an AC component to the biological fluid, wherein said first and second signals may be applied sequentially or simultaneously;
 - (d) measuring a second AC response to the second signal; and
 - (e) further using the second AC response to produce the indication of a temperature of the biological fluid in the reaction zone.
8. (Currently amended) A method for measuring a temperature during a test for determining a concentration of a medically significant component of a biological fluid, comprising the steps of:
- ~~a) applying a first signal having an AC component to the biological fluid;~~
 - ~~b) measuring a first AC response to the first signal; and~~
 - ~~e) using the first AC response to produce an indication of a temperature of the biological fluid.~~
 - a) providing a sensor having at least one measurement electrode adapted to measure the biological fluid;
 - b) applying a first temperature measurement signal having an AC component to the measurement electrode;
 - c) measuring a first AC temperature measurement response to the first temperature measurement signal;
 - d) using the first AC temperature measurement response to produce an indication of a temperature of the biological fluid;
 - e) applying a first concentration measurement signal to the measurement electrode;
 - f) measuring a first concentration measurement response to the first concentration measurement signal to produce an indication of the concentration of the medically significant component; and

g) determining a temperature-corrected concentration of the medically significant component based upon the first AC temperature measurement response and the first concentration measurement response.

9. (Original) The method of claim 8, wherein the first AC response comprises an admittance.
10. (Currently Amended) The method of claim 8, further comprising the steps of:
 - (c) applying a second temperature measurement signal having an AC component to the biological fluid, wherein said first and second temperature measurement signals may be applied sequentially or simultaneously;
 - (d) measuring a second AC temperature measurement response to the second temperature measurement signal; and
 - (e) further determining the temperature-corrected concentration of the medically significant component based upon the first AC temperature measurement response, the second AC temperature measurement response and the first concentration measurement response ~~using the second AC response to produce the indication of a temperature of the biological fluid.~~
11. (Currently amended) The method of claim 8, wherein the first temperature measurement signal is an AC signal.
12. (Currently amended) The method of claim 10, wherein the second temperature measurement signal is an AC signal.
13. (Currently amended) The method of claim 8, wherein the first AC temperature measurement response comprises magnitude information.
14. (Currently amended) The method of claim 10, wherein the second AC temperature measurement response comprises an admittance measurement.

15. (Currently amended) The method of claim 10, wherein the second AC temperature measurement response comprises magnitude information.
16. (Currently Amended) The method of claim 8, wherein the first temperature measurement signal comprises a number of frequencies applied sequentially or simultaneously, wherein the number is greater than one.
17. (Original) The method of claim 16, wherein the number is not less than two and not greater than four.
18. (Original) The method of claim 16, wherein the number is greater than four.
19. (Currently amended) The method of claim 8, wherein the AC component of the first temperature measurement signal has a frequency not less than 1 Hz and not greater than 20kHz.
20. (Original) The method of claim 8, wherein the biological fluid is blood.
21. (Currently Amended) The method of claim 8, wherein said first temperature measurement signal comprises four first temperature measurement signals applied sequentially or simultaneously, and wherein step (ed) comprises ~~determining~~ producing an indication of the temperature using

$$T_{\text{est}} = b_0 + b_1(Y_1 - Y_2) + b_2(Y_3 - Y_4) + b_3H_{\text{est}}$$

Where: T_{est} is the temperature,

b_0 , b_1 , b_2 and b_3 are constants,

Y_1 , Y_2 , Y_3 and Y_4 are respective AC responses

of the four first temperature measurement signals (expressed as admittance), and

H_{est} is an estimated hematocrit value.

22. (Currently amended) A method of accounting for the effect of a temperature variation on a test for a glucose concentration of a biological fluid comprising:
- a) ~~applying at least a first test signal having an AC component to the biological fluid, the first test signal having a first frequency;~~
 - b) ~~measuring at least a first AC response to the first test signal;~~
 - e) ~~determining a temperature value of the biological fluid using the first AC response; and~~
 - d) ~~determining a temperature-corrected glucose concentration of the biological fluid based at least in part upon the temperature value.~~
- a) providing a sensor having at least one measurement electrode adapted to measure the biological fluid;
 - b) applying a first temperature measurement test signal having an AC component to the measurement electrode, the first temperature measurement test signal having a first frequency;
 - c) measuring at least a first AC temperature measurement response to the first temperature measurement test signal;
 - d) determining a temperature value of the biological fluid using the first AC temperature measurement response;
 - e) applying a first concentration measurement signal to the measurement electrode;
 - f) measuring at least a first concentration measurement response to the first concentration measurement signal to produce an indication of the glucose concentration of the biological fluid; and
 - g) determining a temperature-corrected glucose concentration of the biological fluid based at least in part upon the temperature value and the first concentration measurement response.
23. (Currently amended) The method of claim 22, wherein the determining a temperature value comprises determining a hematocrit value of the biological fluid and using the hematocrit value in combination with the first AC temperature measurement response to determine the temperature value.

24. (Currently amended) The method of claim 22, wherein the first AC temperature measurement response includes an admittance.
25. (Currently Amended) The method of claim 22, further comprising the steps of:
- e) applying a second temperature measurement test signal having an AC component to the biological fluid, the second temperature measurement test signal having a second frequency, wherein said first and second temperature measurement test signals may be applied sequentially or simultaneously; and
 - f) measuring at least a second AC temperature measurement response to the second temperature measurement test signal; and
 - g) using the second AC temperature measurement response in the determining a temperature value of the biological fluid.
26. (Currently Amended) The method of claim 25, further comprising the steps of:
- h) applying a third temperature measurement test signal having an AC component to the biological fluid, the third temperature measurement test signal having a third frequency, wherein said first, second and third temperature measurement test signals may be applied sequentially or simultaneously;
 - i) measuring at least a third AC temperature measurement response to the third temperature measurement test signal;
 - j) applying a fourth temperature measurement test signal having an AC component to the biological fluid, the fourth temperature measurement test signal having a fourth frequency;
 - k) measuring at least a fourth AC temperature measurement response to the fourth test signal; and
 - l) using the third AC temperature measurement response and the fourth AC temperature measurement response in the determining a temperature value of the biological fluid.